

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Gary P. Schroth

Serial No. 10/087,411

Filed: March 1, 2002

For: METHODS OF USING
UNNATURAL NUCLEOBASES FOR
DECODING



Confirmation No. 6226

Art Unit: 1634

Examiner: Sitton, Jehanne S.

Attorney Docket No. 9584-030-999

DECLARATION OF DR. GARY P. SCHROTH UNDER 37 C.F.R. § 1.131

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, GARY P. SCHROTH, declare and state that:

1. I am a citizen of the United States and reside at 100 Monasterio Court, San Ramon, California 94583.
2. I am the inventor of the invention disclosed and claimed in the present patent application, Serial No. 10/087,411, filed on March 1, 2002 (the "'411 Application"). As evidenced by the facts described below, I invented the invention described and claimed in '411 Application while employed by the PE Corporation, Applied Biosystems Division, 850 Lincoln Centre Drive, Foster City, CA 94404, the original assignee of the '411 Application.
3. I have reviewed the specification and claims of the '411 Application.
4. As explained in detail below, Exhibits A-H, attached hereto, demonstrate that the subject matter claimed in the above-identified patent application was conceived prior to October 14, 2000, and that diligence was exercised from prior to October 14, 2000, to a subsequent reduction to practice of the claimed subject matter and/or until the March 1, 2002, filing date of the '411 Application.
5. Exhibit A demonstrates that the subject matter of the pending claims was conceived prior to October 14, 2000. Exhibit A is a copy of an Invention Disclosure Form submitted by me to the PE Corporation/Applied Biosystems legal department. I have reviewed Exhibit A. Although the dates have been redacted in accordance with standard practice, the document was prepared and submitted by me to the legal department of Applied Biosystems prior to October 14, 2000.

6. As shown in Exhibit A, I had conceived the subject matter of the pending claims prior to October 14, 2000. For example, pages 3-4 of the Invention Disclosure Form describe the subject matter of the instant claims, as further supported by pages 5-13 of the Invention Disclosure Form describing the utilities for the invention and illustrating exemplary coded beads for use in the recited methods. Specifically, the Invention Disclosure Form describes methods in which non-Watson-Crick bases or "AEGIS bases" (termed orthogonal nucleobases in Claim 1) are incorporated into a "decode oligo" (termed coding oligonucleotide in Claim 1) that is associated with a target specific domain (termed test moiety in Claim 1) to make, for example, a decoding bead (termed coded test unit in Claim 1). In the context of the discussion on page 3 of the Invention Disclosure Form, the coded beads are to be decoded or identified when in sets (a "plurality of coded test units" in Claim 1) or arrays (as recited in Claim 12) in a method where labeled complements ("decoding oligonucleotide" of Claim 1) are utilized to identify the coded beads in an hybridization reaction. Embodiments of coded test units are illustrated, for example, in the figure on page 9 of the Invention Disclosure Form, which is recreated as originally filed figure 1B of the '411 Application (illustrating an embodiment where the "test moiety" and "coding oligonucleotide" are independently linked to a solid substrate as recited in Claim 11 or 25), and the figure on page 10 of the invention disclosure, which is recreated as originally figure 1C of the '411 Application (illustrating an embodiment where the "test moiety" is covalently linked to the "coding oligonucleotide" as recited in Claim 22). In addition, the Invention Disclosure Form discusses that labeled complements are sequentially hybridized in the decoding process (in short, the methods as recited in Claims 2 and 7, for example), the particular types of AEGIS bases (*see* Claim 5), and the use of beads (a "solid substrate" as recited in Claim 6 or 23, for example). Pages 5 and 11 of the Invention Disclosure Form discloses utilities of the instant invention, including but not limited to the use in Zipcode arrays.

7. Exhibits B-H demonstrate that diligence was practiced from prior to October 14, 2000, to a subsequent reduction to practice of the claimed subject matter and/or until the March 1, 2002, filing date of the '411 Application, as explained below.

8. Exhibit B demonstrates that prior to October 14, 2000, the Invention Disclosure Form (Exhibit A) was delivered to outside counsel for preparation of the instant patent application. Exhibit B is a copy of a cover letter forwarding the Invention Disclosure Form (Exhibit A), from Scott Bortner, Senior in-house Patent Attorney at Applied

Biosystems, to Ann Pease, then a patent attorney with the law firm Pennie & Edmonds. The letter is dated September 8, 2000, which is prior to October 14, 2000.

9. Exhibits C-G are copies of cover letters either accompanying various drafts of the instant application from the outside counsels preparing the instant application to in-house patent attorneys at Applied Biosystems, or accompanying comments from myself or in-house patent attorney Scott Bortner that were sent to the outside counsel at Pennie & Edmonds. I have examined the Exhibits C-G with the dates shown, and the dates are all after October 14, 2000, and prior to March 1, 2002, the filing date of the '411 Application.

10. Exhibit C is a copy of a letter from Rahul Pathak, then a patent attorney at Pennie & Edmonds to Scott Bortner, Senior Patent Attorney at Applied Biosystems. The letter is dated February 15, 2001. The letter submits a draft of the instant patent application for review by Applied Biosystems. The letter also requests comments on and additional information for the preparation of the instant patent application.

11. Exhibit D is a copy of a letter from Rahul Pathak at Pennie & Edmonds to Scott Bortner at Applied Biosystems. The letter is dated July 6, 2001. The letter submits a revised draft of the instant patent application for review and comments by Applied Biosystems. The letter also refers to a conversation between Rahul Pathak and Scott Bortner regarding the revision to the draft patent application, which took place during the period between February 15, 2001, the date of the letter in Exhibit C, and July 6, 2001, the date of the letter in Exhibit D.

12. Exhibit E is a copy of a letter from Rahul Pathak at Pennie & Edmonds to Scott Bortner at Applied Biosystems. The letter is dated July 18, 2001. The letter submits further revisions to the draft patent application. The letter indicates figures had been added to the draft patent application. The letter also refers to a conversation between Rahul Pathak and Scott Bortner regarding the revision to the draft patent application, which took place during the period between July 6, 2001, the date of the letter in Exhibit D, and July 18, 2001, the date of the letter in Exhibit E.

13. Exhibit F is a copy of a letter from Patti D. Selan, Patent Administrator at Applied Biosystems to Rahul Pathak at Pennie & Edmonds. The letter is dated October 3, 2001. During the period between July 18, 2001, and October 3, 2001, I had reviewed and provided comments on the draft patent application submitted by Rahul Pathak for my review with his letter of July 18, 2001 (Exhibit E). The letter forwards my comments and Scott Bortner's comments on the draft patent application.

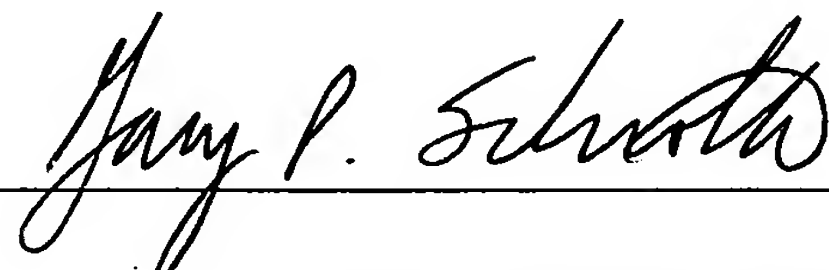
14. Exhibit G is a copy of a letter from Rahul Pathak at Pennie & Edmonds to Scott Bortner at Applied Biosystems. The letter is dated December 20, 2001. The letter submits a further-revised draft of the instant patent application based on my comments and Scott Bortner's comments. The letter also refers to a conversation between Rahul Pathak and Scott Bortner regarding the revision to the draft patent application, which took place during the period between October 3, 2001, the date of the letter in Exhibit F, and December 20, 2001, the date of the letter in Exhibit G.

15. Exhibit H is a copy of a letter from Rahul Pathak at Pennie & Edmonds to Patti D. Selan at Applied Biosystems. The letter is dated March 5, 2002. The letter discusses that the instant patent application was filed on March 1, 2002, and forwards the instant patent application as filed.

16. I have reviewed Exhibits A-H. I hereby confirm that the work evidenced by the documents of Exhibits A-H and all the acts relied upon in this Declaration to establish conception of the invention claimed in the above-identified patent application prior to October 14, 2000, coupled with due diligence from prior to October 14, 2000 to a subsequent reduction to practice of the claimed subject matter and/or until March 1, 2002, the filing date of the '411 Application.

17. I declare further that all statements made in this Declaration of my knowledge are true and that all statements made on information and belief are believed to be true and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated: 5/6/05



Gary P. Schroth, Ph.D.

Exhibits A-H Attached.